

**Amendments to the Claims**

1. *(Cancelled)*

2. *(Currently Amended)* A magnetoresistive memory device (30) according to claim 1, A magnetoresistive memory device comprising an array of magnetoresistive memory elements and at least one magnetic field sensor element, wherein the magnetoresistive memory device comprises a partial or non-homogeneous shielding means so as to shield the array of magnetoresistive memory elements differently from an external magnetic field than the at least one magnetic field sensor element, there being a shielding difference of at least 5%; and

wherein the at least one magnetic field sensor element (32) is shielded with first shielding means (40) having a first magnetic field reduction ratio, and the array (20) of magnetoresistive memory elements (40) is provided with second shielding means (41) having a second magnetic field reduction ratio, the second magnetic field reduction ratio being smaller than the first magnetic field reduction ratio.

3. *(Currently Amended)* A magnetoresistive memory device (30) according to claim 2, wherein the first magnetic field reduction ratio is 1:1.

4. *(Currently Amended)* A magnetoresistive memory device (30) according to claim 1, A magnetoresistive memory device according claim 2, wherein the array (20) of magnetoresistive memory elements (40) and the at least one magnetic field sensor element (32) are integrated monolithically on a single chip.

5. *(Currently Amended)* A magnetoresistive memory device (30) according to claim 1, A magnetoresistive memory device according claim 2, wherein the array (20) of magnetoresistive memory elements (40) and the at least one magnetic field sensor element (32) are located on separate dies in a single package.

6. *(Currently Amended)* A magnetoresistive memory device (30) according to claim 1, A magnetoresistive memory device according claim 2, wherein the array (20) of

magnetoresistive memory elements (10) and the at least one magnetic field sensor element (32) are located on separate dies in separate packages.

7. (*Currently Amended*) A method for measuring an external magnetic field present at an array (20) of magnetoresistive memory elements (10), comprising shielding a magnetic field sensor element (32) with a first shielding means (40) having a first magnetic field reduction ratio, shielding the array (20) of magnetoresistive memory elements (10) with a second shielding means (41) having a second magnetic field reduction ratio, there being a shielding difference of at least 5% between the first and the second magnetic field reduction ratio, and determining the external magnetic field value at the array (20) of magnetoresistive memory elements (10) based on the knowledge of the first and second magnetic field reduction ratio.

8. (*Original*) A method according to claim 7, wherein the second magnetic field reduction ratio is smaller than the first magnetic field reduction ratio.

9. (*Original*) A method according to claim 7, wherein a relationship between the first and second magnetic field reduction ratio is constant for an external magnetic field range.